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ABSTRACT

The paper examines policy issues in the area of gifted education. The first section reviews the problem area including definitions of giftedness and aims of gifted education. The next section briefly outlines major research influences which focus on learning rate, socialization, school achievement, and life achievement. The third section reviews regional and national provisions for gifted students which discuss early provisions, the surveys of Sidney Marland and Patricia Bruce Mitchell, and the two recent surveys of P. O'Connell and June Cox. The final section of the paper discusses issues that decision makers need to consider when they plan policy initiatives. Structured around three themes--substantive aims, effective programs, and state-level administrative leadership--the section synthesizes policy implications, and describes and gives exemplary language for five policy recommendations. The following five policy initiatives are encouraged: (1) clarify definitions and aims; (2) increase the number of effective program options; (3) recruit good teachers for gifted students; (4) improve training for teachers of gifted students; and (5) strengthen state-level support for gifted programs. (DB)

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POLICY
ISSUES

Intellectually Gifted Students: Issues and Policy Implications

by Craig Howley

November 1986

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INTRODUCTION

In the context of current practice, this paper discusses the issues and policy implications surrounding the education of intellectually gifted students. Intellectually gifted students are usually understood to be students who score exceptionally well (usually two standard deviations above the mean) on a comprehensive IQ test (e.g., the Stanford-Binet). This view exists as the clearest single operational definition among six kinds of giftedness usually cited by state and federal authorities: (1) intellectual, (2) academic, (3) creative, (4) artistic, (5) leadership, and (6) psychomotor. State educational agencies have included various combinations of these types of giftedness in policy statements.

This paper is based on the consensus of research that has defined the educational needs of gifted students. It will review major issues pertinent to the schooling of intellectually gifted students: alternative definitions and their relationship to other kinds of giftedness, educational aims, research literature, programs, administration, and policy implications.

The paper is organized into four sections. The first three sections give (1) a review of the problem area, which focuses on definitions of giftedness and aims of gifted education; (2) a brief summary of the literature, which focuses on learning rate, socialization, school achievement, and life achievement (adulthood); and (3) a review of regional and national provisions for gifted students, which discusses

early provisions, the surveys of Marland and Mitchell, and the two recent surveys of O'Connell (1986) and Cox (1985).

The final section of the paper discusses issues that decisionmakers need to consider when they plan policy initiatives. Structured around three themes--substantive aims, effective programs, and state-level administrative leadership--the section synthesizes policy implications, and then describes and gives exemplary language for five policy recommendations.

REVIEW OF PROBLEM AREA

Recent support of special programming for gifted students has grown steadily since 1972, when Sidney Marland issued his report on the schooling of exceptionally able students. Recent surveys indicate that support continues to grow.

Academic Giftedness and Intellectual Giftedness

The relationship between intellectual giftedness and academic giftedness--among all six types of giftedness--is critical to an understanding of the problem. Fine distinctions between academic giftedness and intellectual giftedness serve to obscure the relevance of both types of giftedness to cognitive learning. A distinction more useful to providing services is the distinction between abilities that strongly influence school learning and abilities that are less relevant to learning in school. Whereas the relationship of leadership, creativity, and psychomotor giftedness to schooling is not clear, both academic giftedness and intellectual giftedness are clearly relevant to cognitive learning.

Cognitive learning--which draws on cognitive abilities such as those that support mathematical understanding, written expression, and the understanding of social issues--is in fact the focus of most classroom activity. According to the most recent survey of the states, cognitive abilities are also the most frequent focus of classroom activity in gifted education programs, as well, regardless of whether or not a state has adopted a definition that includes other types of giftedness (O'Connell, 1986).

Noncognitive learning--which draws on noncognitive abilities such as those that support leading a committee, dressing attractively, winning in sports competitions, or managing personal relationships--is not the focus of much classroom activity. These abilities may be valuable to individuals and to society, but they are less pertinent than cognitive abilities to classroom activity.

The types of abilities believed to constitute giftedness are related to the definitions of gifted children. Some experts believe that a gifted child is a different kind of child. Others insist that a gifted child simply resembles the average older child of a certain age. One's view of this distinction (kind or degree) affects one's choices about the aims of programs for gifted students.

Qualitative and Quantitative Differences

Those who view giftedness as a qualitative difference (kind of child) sometimes hypothesize organic differences in the brains of gifted children and other children (e.g., Clark, 1983); sometimes they assert that gifted children think in different ways from other children (Parnes, 1981); many experts seem to believe that a combination of traits (e.g., above-average ability, above-average task commitment, and above-average creativity) make gifted children qualitatively different from other children (e.g., Renzulli, 1977).

Those who view giftedness as a quantitative difference (resemblance to older children) tend to be more empirical in their approach to characterizing gifted children. In the view of these experts, giftedness is a matter of (1) learning rate, (2) degree of exceptional difference on

a norm-referenced test, and (3) possession of advanced skills and knowledge (e.g., Stanley, 1976).

Two observations are pertinent to an understanding of this issue. First, in research about giftedness, the qualitative view is often associated with noncognitive abilities and skills (e.g., motivation, social competence, situational leadership ability). By contrast, the quantitative view is associated more with cognitive abilities and skills (e.g., general knowledge, receptive language, mathematical understanding). Second, clear and valid definitions of qualitative differences are more difficult to construct than clear and valid definitions of quantitative differences. Clearer definitions (i.e., quantifiable definitions) of giftedness support efforts to develop measurable aims in programs for gifted students (cf. Gallagher, 1985).

Aims of Gifted Education

Appropriate aims for gifted education should conform to (1) the definition of gifted students, (2) the nature of schooling, and (3) the anticipation of measurable effectiveness. They should be consistent with political democracy, due process in the schools, and pedagogical good sense.

Policymakers often justify programs for gifted students as a matter of importance to the national interest. The Gifted and Talented Children's Act of 1978 (PL 95-561), for example, uses this justification. Because it is based on claims that are unsubstantiated by research, this justification is misleading (see "Life Achievement" below). By the criteria cited above, the assertion that intellectually gifted students

are essential to the national interest is inadequate. Gifted students might be better served if policymakers popularized another aim.

Equal Access

Students who are identified as gifted are usually white students from comparatively affluent backgrounds. If the issue of equal access is not dealt with reasonably in policy and in practice, the public may perceive that the lack of access by all socioeconomic classes, all races, and all ethnic groups makes gifted programs elitist and undemocratic. Equal access pertains to gender, however, as well as to race and low socioeconomic status. Female students, like blacks, are traditionally underrepresented in math and science programs.

The issue of equal access has not been resolved because the experts cannot agree about the cause of inequality. Some experts believe that genetic differences are responsible for the poor performance of some groups (i.e., blacks, hispanics, low-SES whites, native Americans, and women) on the norm-referenced tests used most often for identification. The response of other experts has been to abandon norm-referenced testing altogether rather than to take measures to eliminate the abuse of testing. Abandonment of norm-referenced testing has not, however, made identification practices more fair (Howley, Howley, & Pendarvis, 1986). At the root of testing abuses lie assumptions about the relationship of group differences in test performance to differences of race, gender, and social class.

BRIEF SUMMARY OF RESEARCH

In the 19th century a number of authors developed theories that linked differences in degree of talent to hereditary origins. The work of these authors was interesting, but it was not well-grounded empirically. Moreover, most of these works addressed professional talent in adults rather than academic talent in children.

Major Research Influences

Francis Galton's Hereditary Genius (1962/1869) was among the first empirical investigations of talented individuals. Galton believed that he had conclusively demonstrated the inherited nature of talent.

Galton's work had a profound influence on Lewis Terman, the most influential 20th century advocate of special arrangements for gifted students. Because he accepted Galton's conclusions so completely, Terman would have been skeptical of the contemporary concern for equal access.

Between 1925 and 1968, Terman and his colleagues published the most extensive longitudinal study in the history of education. Terman's work proved that it was possible to identify large numbers of very talented students, and it established the perception that school programs needed to be altered for such students.

Terman's work also seems to have strongly influenced the evolution of research themes in gifted education: learning rate, socialization, school achievement, and life achievement in adulthood.

Learning rate. Investigations of the learning rate of gifted students are based on the resemblance of their performance to the performance of older students. The capacity of gifted students to learn

rapidly has been confirmed by a great deal of research. It has been observed even among seriously underachieving gifted students (Fearn, 1982). Experts in gifted education (e.g., June Cox, James Gallagher, Daniel Keating, Joseph Renzulli, Dorothy Sisk, and Julian Stanley) have frequently observed that this research finding has not been fully appreciated by practicing educators. Policy initiatives that strongly support use of the gamut of accelerative strategies would be appreciated by teachers of the gifted, administrators of gifted programs, and the experts just cited.

Socialization. Some observers believe that gifted children are typically perceived as abnormal by teachers and classmates. Some researchers have hypothesized, therefore, that gifted children may be at risk emotionally and socially in typical classroom settings.

Studies like Terman's refute this hypothesis. Gifted students seem to be less at risk emotionally and socially than average students, even when gifted students are enrolled in programs with able students several years older.

School achievement. What level of achievement can be expected of the typical gifted student? The reader should recognize that "typicalness" is a statistical aggregate--a "typical" gifted student, though uncommon in the flesh, is a useful construct to guide the understanding of both policymakers and practitioners.

Gifted students typically do well in school, but their achievement is not typically so extreme as their ability. Gifted students are not typically straight-A students, though they typically have GPAs above

3.0. Many gifted students apparently receive only mediocre grades; some receive bad grades.

Gifted students typically score quite well, however, on standardized achievement tests. In the typical case, an achievement level of one-and-a-half standard deviations above the mean can be inferred from an IQ two standard deviations above the mean. Some evidence suggests that, among gifted students, mathematics achievement is typically less extreme than reading achievement. The comparatively lower mathematics achievement among gifted students (as measured by standardized tests) may be a result of the slow pace of mathematics instruction in the schools, according to some observers.

Life achievement (adulthood). Because programs for gifted students have been justified as essential to the national interest, researchers have hypothesized that gifted students will become very influential adults. This hypothesis has been the object of intense debate because the existence of gifted programs appears to depend on its confirmation.

The hypothesis must, however, be examined in three forms: that gifted students are (1) destined for national eminence, (2) likely to become the most successful members of the occupations in which they are employed, and (3) likely to become successful, productive adults.

The first form of the hypothesis, implicit in the most common justification for gifted programs (i.e., national defense), has been examined in several recent reviews of Terman's data on highly gifted subjects. On the basis of this analysis, the hypothesis is not confirmed.

The second form of the hypothesis is also not confirmed by research (Baird, 1985). Gifted students do not tend to become the most successful members of their chosen occupations. Academic talent has a strong effect on the probability of gaining access to a coveted profession. Baird concluded that though academic performance and academic training were important influences, a high level of professional success necessarily depends to some extent on noncognitive traits that vary by profession (1985).

The third form of the hypothesis has been investigated extensively and is confirmed by all investigations. Virtually all studies of the adulthood of gifted students agree that gifted adults enter coveted professions far more often than average adults and that they enjoy more satisfying personal relationships than average adults.

REGIONAL AND NATIONAL PROVISIONS FOR GIFTED STUDENTS

In 1900, the first special provisions for gifted students were begun in New York City. During the 1920s, both Lewis Terman and Leta Hollingworth established self-contained classes for highly gifted students in schools under their influence.

Between 1925 and 1972, many different sorts of programs emerged, grew, and foundered. In 1964, Gowan and Demos compiled an impressive list of programs scattered around the nation. Though programs were not systematically surveyed in this era, the net trend nationally seems to have been a slow increase in both numbers of students served and in numbers of programs operated.

In 1972, however, Sidney Marland's report to the U. S. Congress presented the first comprehensive survey of the status of gifted students in the nation's schools. Marland found that gifted students were not being identified or served by the schools and that educators were unreceptive to gifted students (Marland, 1972).

Since 1972, state provisions for gifted students have been reviewed in four major reports. Patty Bruce Mitchell reported data gathered from the states in 1976 and 1981. A team headed by June Cox recently synthesized the promising practices of gifted education in 1985. In 1986, the Council of State Directors of Programs for the Gifted reported a state-by-state survey of provisions for gifted students (O'Connell, 1986). An understanding of the results of these studies is aided by a review of the difference between acceleration and enrichment.

Acceleration and Enrichment

Throughout the history of gifted education, there have been just two strategic principles of adjusting school practices for gifted students: acceleration and enrichment. Acceleration and enrichment are, however, different kinds of procedures, not the opposite extremes of a single continuum.

Acceleration is usually considered to entail an administrative adjustment. It allows gifted students to be educated with the older children whom they resemble; its goal is to accommodate the rapid learning rate of gifted students. In most cases of acceleration, the curriculum itself is not altered.

Enrichment, on the other hand, ideally represents additions to the curriculum. The goal of enrichment is to accommodate the qualitatively different learning strengths that are believed by its proponents to be unique to gifted students, who are conceived as a different kind of child. Typical enrichment configurations may place gifted students for one day per week at a resource program to learn about creative problem-solving, or they may assign a gifted student to a community professional who serves as a role model. For discussion of how these distinctions relate to all program variants and to the academic curriculum, as distinguished from the additional topics of the enrichment curriculum, see Howley et al., 1986.

The Marland and Mitchell Surveys

Sidney Marland conducted the first survey of gifted education in 1972. He found that a majority of principals in the nation's schools

denied that there were any gifted students in their schools. Throughout the nation, the overwhelming majority of gifted students received neither acceleration nor enrichment.

Patricia Bruce Mitchell gathered data from the states in 1976 and 1981 (see Table A). Her studies (Council for Exceptional Children, 1978; Mitchell, 1981) showed that the states were responding to Marland's call for concern by allocating more state funds to gifted education. Mitchell discovered that strong state support of gifted education was associated with the following three characteristics:

- mandated programs were provided by all local education agencies;
- gifted programs were administered together with special education programs; and
- the protections of PL 94-142 were extended to gifted students.

Mitchell's data indicate the sorts of state-level provisions that are associated with the development of extensive (not necessarily effective) programs for gifted students. It is not clear that such provisions actually cause the development of extensive programs, much less of effective programs. The other studies reviewed here indicate that additional provisions need to be made to support the development of effective programs.

The Richardson Report

June Cox supervised a national study, known as the "Richardson Report", which documented the most common program configurations and identified promising practices. Unlike previous studies, the Richardson Report examines educational effectiveness, not state-level administrative

and financial support. The results were summarized in a monograph, Educating Able Learners (Cox, Daniel, & Boston, 1985). Cox and her colleagues investigated both the extent and effectiveness of acceleration and enrichment (including internships for gifted secondary school students). Enrichment, they found, typically took place in "pull-out" programs.

Pull-out programs are part-time enrichment programs that remove students from regular academic classes. They are usually based on a curriculum different from the curriculum in regular classes. They may provide activities presumed to address emotional and social competencies or to address generic thinking skills not related to instruction in a particular academic discipline.

Acceleration can, according to Cox et al. (1985), be provided in many ways, e.g., early entry to first grade, concurrent enrollment in both college and high school, special accelerated classes, self-contained gifted classrooms, and credit by examination. Cox et al. studied the amount of acceleration in two categories: moderate acceleration, which allows students to complete 13 years of schooling in 11 or 12 years, and radical acceleration, defined as allowing completion of 13 years of schooling in 10 or fewer years.

Pull-out enrichment programs were the most common form of providing special services to gifted students; acceleration was among the least common. Cox's team discovered that pull-out programs were very ineffective, whereas acceleration was very effective. Internships at the secondary mentorship level were also effective, according to Cox et al.

One conclusion of the Richardson report may be of particular interest to policymakers: "The data from our survey suggest that schools which begin with pull-out classes are likely to stay with that limited approach" (Cox et al., 1985, p. 44). Once pull-out programs have been established--as they have been in many places--careful attention and extra effort will probably be required if effectiveness is to be improved.

Readers should remember that pull-out programs that provide accelerated instruction at the elementary level have not been extensively implemented or studied. It is probable that the ineffectiveness of pull-out programs can be ascribed to the extensive use of academically irrelevant activities rather than to removing chidren from regular classes.

Research suggests that service configuration (part-time resource rooms are typical of pull-out programs) is not in itself a significant influence on effectiveness. Rather, it is the practices typically associated with a configuration that are responsible for effectiveness. Enrichment is the practice most typically associated with pull-out programs for gifted students.

The Report of the Council of State Directors

In the fall of 1985, a comprehensive survey was prepared for the Council of State Directors of Programs for the Gifted (O'Connell, 1986). The topic of the study was primarily state-level provisions for gifted education. The findings are synthesized below. Data for states served by the Appalachia Educational Laboratory (AEL) and selected nearby states are given in Table B. Results of a telephone survey of gifted coordinators in AEL member states are found in Appendix A.

Like Mitchell's data, the council's data suggest that mandated local programs, special education administration, and PL 94-142 due process procedures are associated with states that have extensive gifted programs. The data also tend to support Cox's conclusions about program effectiveness. Pull-out programs were conducted in all states, whereas provisions for acceleration were minimal (see Table B).

The council also developed information about how states were addressing the issue of equal access to gifted programs. Only two of the 15 states in Table B reported provisions that were both specific in detail and unique to gifted programs. Some reported that state and federal nondiscriminatory regulations were applied to gifted programs. Over half reported that they had no provisions at all.

IMPLICATIONS FOR POLICY INITIATIVES

The final section of this paper deals with implications for policy initiatives. It is divided into three parts. The first part synthesizes policy implications around the three major themes of this paper: (1) substantive aims, (2) effective programs, and (3) administrative leadership.

The second and third parts describe (part II) and provide exemplary language for (part III) five specific policy recommendations:

- clarifying definitions and aims,
- increasing the number of effective program options,
- recruiting good teachers for gifted students,
- improving training for teachers of gifted students, and
- strengthening state-level support and assistance.

Part I: Synthesis of Policy Implications

The following discussion is based on research findings. Policymakers should nonetheless remember that even the most careful research results can be challenged on various grounds.

First theme: Substantive aims of schooling for gifted students. Feasible aims are those that research suggests can be accomplished. The judgment of accomplishment is easier when aims can be measured reliably and validly. This insight suggests that a quantitative view, based on cognitive abilities (achievement and IQ), provides a framework in which progress toward substantive aims can be measured.

Explicit provisions to ensure equal access are a necessary part of any definition. Many educators seem to believe that using a definition

that includes different sorts of talent is a good way to provide for equal access. This view is based on the assumption that different groups characteristically display different sorts of talent. Available evidence suggests the assumption is false.

A definition that includes both cognitive and noncognitive abilities will not, by itself, increase equal access to gifted programs. On the contrary, use of such a definition will, by itself, make it more difficult to ensure equal access. Under such a definition, educators who are interested in promoting equal access need to develop provisions that address several kinds of talent, some of which (e.g., creativity and leadership ability) cannot be measured as reliably or validly as can academic abilities (e.g., achievement and IQ).

The aims of gifted programs that relate to this view of definition are those that address academic learning--rapid mastery of basic skills and advanced study in mathematics, literature, history, foreign languages, natural sciences, and social sciences. In this view, computers are viewed as a tool of an academic discipline, not as a separate entity in the curriculum.

Second theme: Effective programs for schooling gifted students. Effective and affordable programs come in two varieties: first, those that are absolutely inexpensive, and second, those that have an attractive cost per benefit ratio. Acceleration is absolutely cost effective, and it is one of the most educationally effective provisions in the entire pedagogical research literature.

The cost per benefit ratio of various service configurations (e.g., consultative services, part-time resource room, full-time special class)

has been investigated by James Gallagher and his colleagues at the University of North Carolina (Gallagher, Weiss, Oglesby, & Thomas, 1982). They discovered that the most intensive service configurations (e.g., full-time, self-contained classrooms for the gifted) provide much greater benefits at equal or less overall cost than the least intensive configurations. This finding means that it costs no more to provide full-time service than it does to provide minimal part-time service. This conclusion is a remarkable finding.

Use of more intensive service configurations may be one way in which school districts can move away from the pull-out model. Such a move may also help promote wider use of accelerative strategies.

Support from parents and from teachers for pull-out enrichment programs is not good, according to the Richardson report. Pull-out programs are "not an easy first step that leads to more comprehensive programming" (Cox et al., 1985, p. 44). Districts that started with only pull-out programs were unlikely to develop more comprehensive programming. Instead, they were likely to limit their program offerings to the pull-out model.

According to the report, the most successful gifted programs in the nation started with one or several configurations (depending on the availability of local resources) and planned more extensive provisions. Districts that followed this procedure were most likely to implement various forms of acceleration.

Because the aims of most gifted programs (i.e., pull-out programs) have not been to maximize the achievement of gifted students, measures of

achievement (either direct or indirect) have not typically been used to assess the effectiveness of gifted programs. Most available achievement tests, however, are not sufficiently difficult to document achievement gains among very bright junior and senior high school students. For older students, therefore, indirect measures of achievement may be more valid than direct measures of achievement.

Third theme: Administrative leadership. Mandating local programs, administrating gifted education with programs for other exceptional students, and providing due process rights to gifted students are associated with strong support for gifted programs across the nation. This trend has been observed for more than 10 years.

Though the observed relationship is not necessarily a causal relationship, effective local programs probably develop more frequently in environments where support for gifted education is strong. It is unlikely that widespread improvement will emerge without active leadership at the state level. Policymakers should pay particular attention to rural and inner city schools, where services to gifted students are usually less strong than in suburban schools.

State administrative leadership must also address the quality of teachers who work with gifted students. Successful teachers of the gifted are themselves very able academically; they conduct their classes in a businesslike fashion; and they encourage student diversity and independence of thought (Bishop, 1968). The need of very able students for such teachers is arguably more acute than that of less able students. There is considerable dispute about what sort of measures are

needed to secure such teachers, however. This issue is examined in terms of policy implications in Part II, below.

Part II: Policy Recommendations

Future policies must foster several trends at the local level. Implementation of the following trends would accomplish this purpose.

Clarifying definitions and aims. A population of gifted students must be identified in a way that addresses the requirements of relevance to schooling (i.e., cognitive learning), reliability and validity of identification (i.e., eligibility determination), and fairness (i.e., equal access to an essential benefit).

Definitions should be operationalized using tests of established validity and reliability to measure cognitive ability and achievement. Such tests are necessarily flawed, but they have biases that are accessible to inspection. Less reliable and less valid measures do not have this essential virtue. Aims should promote substantive academic learning in school subjects related to literature, mathematics, natural sciences, and social sciences. Virginia is now in the process of revising its definition to address academic abilities (see Appendix A).

Increasing the number of effective program options. Local programs must provide a range of programming options for gifted students. A single arrangement cannot address the needs of most students. In the past, pull-out programs have served most frequently as the single arrangement available to the vast majority of gifted students. This state of affairs is regretable, since pull-out programs are not effective. A carefully designed and implemented program of acceleration

would better approximate a single arrangement that addresses the needs of gifted students; however, even when acceleration is practiced sensibly, it must be supported by other options. The Richardson Report (Cox et al., 1985) can inform policy discussions that address the issue of program development.

Recruiting good teachers for gifted students. A general finding of the teacher effectiveness literature is that the best teachers of any group share many characteristics of the group with which they work. Academic talent, interest in learning and in sharing learning, and a dedication to hard work are characteristics that gifted teachers and gifted students should share.

Teachers of the gifted must be selected on the basis of a strong academic background. While such a background does not guarantee instructional effectiveness, lack of excellent academic skills thoroughly compromises a teacher's effectiveness in working with gifted students. In West Virginia, Marshall University's program in gifted education has established a minimum GRE score for acceptance (E. Pendarvis, personal communication, November 7, 1986).

Teachers of gifted students must also be good teachers who are sensitive to the characteristics of gifted students and capable of responding to the educational needs of gifted students. Such teachers should advocate substantive academic programs (including the use of various accelerative strategies) in which they can provide or arrange for effective instruction. Judgment of these qualities, however, is more difficult than a judgment of academic excellence (Darling-Hammond, Wise, & Pease, 1983).

Improving training for teachers of gifted students. Some special preparation is necessary for teachers who are working with or who intend to work with gifted students.

Policymakers should, however, be aware of the fact that research does not address the issue of whether or not special certification results in selection and development of good teachers for gifted students. Unless selection for training programs is rigorous (it usually is not), the effect of special training on teacher quality is necessarily moot. Nonetheless, whatever the quality of candidates for special training, it is important that teachers read and evaluate the research about gifted students and learn about alternatives for developing and implementing programs for gifted students.

Strengthening state-level support and assistance. The field of gifted education needs assistance from the state level to help improve programs for gifted students. Such support and assistance can be provided in many ways. Some examples are suggested below.

Regulations need to be updated to reflect the concerns outlined in this paper. The single most influential change in regulations might be a strong endorsement of acceleration. Such an endorsement should require that acceleration be considered in the development of Individualized Education Programs or in Group Education Programs. The greatest effect of such a provision, however, would probably accrue in such states that provide the due process rights of PL 94-142.

States might also consider whether or not school districts should be encouraged or required to employ a full- or part-time coordinator of

gifted education. West Virginia is reportedly about to consider this proposal (see Appendix A).

Because gifted education is an evolving field, many problems remain to be confronted. Improved staff development activities can provide a forum in which to develop solutions to emerging problems. States might therefore consider taking the lead in improving staff development for teachers of gifted students. Well articulated provisions for staff development may be an alternative to special certification programs.

Part III: Exemplary Policy Statements

The following statements exemplify the kinds of policies that are required for the improvement of gifted education, according to the discussion of this paper. These statements should be understood as a starting point for development work. They represent a range of options that must be adapted to state and local circumstances.

Clarifying definitions and aims. Model definitions and aims to address academic skills for gifted students are given below. They are developed as the most explicit example of the issues discussed throughout the paper.

The following model definition of the gifted student includes eligibility determination on the basis of either intellectual achievement or intellectual potential. It also makes explicit a provision for the equal access of nonadvantaged students:

> A model definition. Except in the case of a nonadvantaged student, a student shall be declared eligible to receive special services under the auspices of gifted education if either of the following conditions obtains: (1) the student scores two standard deviations above the mean on any major portion of a comprehensive

evaluation-level test of achievement (e.g., the mathematics cluster of the Woodcock-Johnson Psychoeducational Battery, Part II Tests of Achievement) in consideration of one standard error of measurement, OR (2) the student scores two standard deviations above the mean on a comprehensive evaluation-level test of intelligence (e.g., the Stanford-Binet Intelligence Scale) in consideration of one standard error of measurement. In the case of nonadvantaged students, a declaration of eligibility shall occur in consideration of three standard errors of measurement. The term "nonadvantaged" refers to ethnically different students, to students for whom English is not the native tongue, and to students who are eligible to receive free or reduced meals.

The most consistent aims of programs for gifted students address cognitive goals. They do not specifically address noncognitive aims, since the specific affective needs of gifted students have not been clearly distinguished from the affective needs of all students. Gifted students, moreover, have seldom been identified on the basis of affective need or capacity. The following list, therefore, addresses cognitive aims that are appropriate for gifted programs:

1. maximize the achievement of eligible students in verbal and mathematical disciplines, including reading, writing, mathematics, natural science, history, and social science;

2. ensure that 60% of gifted students complete grades K-12 in fewer than 13 years;

3. ensure that gifted students achieve (on norm-referenced tests of achievement) at levels commensurate with their ability;

4. increase by 20% the number of gifted students who apply to very selective colleges and universities; and

5. increase by 15% the number of gifted students who attend very selective colleges and universities.

Increasing the Number of Effective Program Options. The following 14 options are examples of the sort of provisions that should be available in a gifted program. It is important to remember that only a few options should be implemented at one time. Other options should be

added as the gifted program demonstrates it is able to meet targeted aims. The options below are divided into elementary (K-8) and secondary (9-12) levels. The options should be adapted to local circumstances.

- First Program Option (Elementary Level): Each elementary school shall provide special accelerated reading and mathematics classes for gifted primary students.

- Second Program Option (Elementary Level): Each elementary school shall provide a review process to consider yearly, or more frequently upon request of teachers, parents, or students, which accelerative strategy or strategies (e.g., cross-class placement, special accelerated classes, early entry, dual attendance, combined grades, grade-skipping) are appropriate for each gifted student.

- Third Program Option (Elementary Level): Each elementary school shall offer a choice of 3 years of either of two foreign languages to gifted students.

- Fourth Program Option (Elementary Level) Each elementary school shall offer an accelerated literature and writing class that prepares students to write good 10-page essays by age 13. (A good essay conforms to high standards of grammar, diction, and style. High standards for gifted students aged 13 shall approximate the best efforts of first-year undergraduates.) Such a course will provide 1 Carnegie Credit in high school English.

- Fifth Option (Elementary Level): Each elementary school shall provide an advanced mathematics class to deliver the complete Algebra I (linear and quadratic equations through the derivation and application of the quadratic formula) to gifted students in grades 4-8. Such a course will provide 1 Carnegie Credit in high school mathematics.

- Sixth Option (Elementary Level): Each elementary school shall provide an accelerated science class in biology or chemistry that will provide 1 Carnegie Credit in high school science.

- Seventh Option (Secondary Level): Each secondary school shall develop procedures that allow students to earn course credit by examination (initially in a limited number of courses).

- Eighth Option (Secondary Level): Each secondary school shall develop an accelerated (3 or 4 years in 2 or 3) mathematics sequence that includes geometry, a second course in algebra, trigonometry, and integral and differential calculus to begin in

the ninth grade. Such a sequence shall provide 3 or 4 Carnegie Credits in high school mathematics.

- Ninth Option (Secondary Level): Each secondary school shall develop an accelerated (4 years in 3) literature program that requires the reading of a major work each month and frequent writing about works read. The course sequence should cover British and American literature, foreign literature in translation, and philosophy (using original sources). Such a sequence shall provide 4 Carnegie Credits in high school English.

- Tenth Option (Secondary Level): Each secondary school shall develop a strategy to enable gifted students to complete a science sequence that provides 3 Carnegie Credits in biology, chemistry, and physics by the end of grade 11.

- Eleventh Option (Secondary Level): Each secondary school shall develop an advisement system that ensures that an increasing number of gifted students attend very selective institutions of higher education.

- Twelfth Option (Secondary Level): In cooperation with other institutions, each secondary school shall develop an internship program that gives interested gifted students a substantive experience with an outstanding community sponsor during the senior year of high school (for those gifted students who elect a 4-year high school program).

- Thirteenth Option (Secondary Level): Each district shall develop mechanisms to provide abbreviated vocational programs to gifted students as well as to talented vocational students.

- Fourteenth Option (Both Elementary and Secondary): Each district shall develop procedures that permit the participation, in selected activities of the gifted program, of limited numbers of academically talented students who have been determined to be ineligible for identification as gifted students.

Recruiting good teachers for gifted students. Academically very able students must be taught by teachers who are themselves very talented academically. State departments of education and board of regents might promote the following exemplary provision among institutions of higher education:

I. Candidates for admission to programs in gifted education must:

- submit GRE composite or NTE core battery scores at or above the 90th percentile,
- possess a bachelor's degree in a liberal arts discipline, and
- demonstrate knowledge of:

  (1) child or adolescent development,

  (2) introduction to education (including history, philosophy, or sociology of education), and

  (3) educational tests and measurement.

II. Candidates shall elect to demonstrate prerequisite knowledge in these three topics by either of two methods: (1) through presentation of transcripts of a minimum of 9 hours of coursework in the prerequisite topics or by (2) qualification on criterion-referenced tests, administered by the training program, that are designed to measure competence in the prerequisite topics.

Providing training for teachers of gifted students. The following brief description of an exemplary approach to training for teachers of gifted students is based on inservice rather than preservice training. At present, many (perhaps most) candidates who are pursuing certification in gifted education are employed simultaneously as teachers of gifted students. The following program outline integrates candidates' teaching of gifted students and learning about gifted students in order to create a more productive training program.

> Candidates for certification in gifted education shall complete a one-year internship in a program that delivers gifted services in a lab school setting. During two semesters, teaching interns shall devote two hours per day to instruction in foreign language, reading, writing, literature, mathematics, or social, natural, or computer science. Teaching interns shall devote four hours of class

time per day to (1) internship seminar and discussion group, (2) courses in the literature on gifted students, and (3) curriculum and instructional design workshop.

Providing state-level support and assistance. State departments of education can undertake several actions to provide support and assistance to local programs. For example, state departments of education can:

- develop regulations that promote academic programs and acceleration for gifted students;
- establish, in cooperation with an institution of higher education, a model training program for teachers of the gifted (such as that abstracted in the preceding section);
- study the effect of equal access provisions on the proportional representation of low SES and black students in gifted programs;
- secure scholarship funds for award to needy gifted students who gain admission to very selective colleges or universities;
- develop model curricula and instructional design for special accelerated courses or course sequences;
- develop reliable and valid methods to evaluate several types of gifted programs (e.g., accelerated reading classes at the primary level);
- develop exemplary programs for underachieving gifted students at several selected sites throughout the state;
- develop plans for a full-time residential school for gifted students;
- provide minigrants for state higher education faculty in gifted education to conduct research among gifted students in the state's public schools;
- sponsor a consortium of professional, commercial, industrial, and research representatives to provide exceptional internship opportunities to gifted students on a statewide basis.
- establish regional or local leadership for the administration of gifted programs (e.g., requiring that local districts employ a coordinator of gifted programs).

SUMMARY

Support for gifted programs is growing nationally and regionally. Some states provide substantial support to gifted education. Many states now mandate that each local district provide services. Few states, however, have addressed the issue of equal access to gifted programs. Several approaches are available to educational planners who are aware of the need to ensure equal access.

Research suggests that most gifted students can successfully complete the K-12 curriculum in 6-8 years rather than in 13 years. Throughout the nation, however, such rapid progress is seldom permitted and even more seldom encouraged. A variety of changes is necessary to allow gifted students to do what we know they can do.

It is not easy to implement acceleration. Policies for this purpose need to be developed so that sensible changes can be implemented. The synthesis of this paper suggests the sorts of policies that are necessary.

This paper recommends five policy initiatives and presents exemplary policy statements to address each initiative:

- clarify definitions and aims,
- increase the number of effective program options,
- recruit good teachers for gifted students,
- improve training for teachers of gifted students, and
- strengthen state-level support for gifted programs.

TABLE A Data from Mitchell (1981) for the Fifty States

BOX 4.4 Overview of State Provisions for Gifted Education

State	Sp Ed	W/ Han	Local	$1M	$5M	$/Child	Certif
Alabama	X	X	X	n/a	n/a	n/a	X
Alaska	X	X	X	X	O	X	O
Arizona	O	O	X	n/a	n/a	n/a	O
Arkansas	X	O	O	O	O	O	O
California	O	O	O	X	X	O	O
Colorado	O	O	O	O	O	O	O
Connecticut	X	O	O	X	O	O	O
Delaware	X	O	O	O	O	O	O
Florida	X	X	X	X	X	X	X
Georgia	X	X	X	X	X	O	X
Hawaii	X	O	O	O	O	O	O
Idaho	X	X	X	n/a	n/a	n/a	O
Illinois	O	O	O	X	X	O	O
Indiana	O	O	O	O	O	O	O
Iowa	O	O	O	O	O	O	O
Kansas	X	X	X	X	O	O	X
Kentucky	O	O	O	X	O	O	O
Louisiana	X	X	X	X	O	O	X
Maine	X	O	O	O	O	O	O
Maryland	O	O	O	O	O	O	O
Massachusetts	O	O	O	O	O	O	O
Michigan	O	O	O	O	O	O	O
Minnesota	O	O	O	O	O	O	O
Mississippi	X	O	O	X	X	X	X
Missouri	O	O	O	X	O	O	O
Montana	O	O	O	O	O	O	O
Nebraska	O	O	O	O	O	O	O
Nevada	X	X	X	O	O	O	O
New Hampshire	X	O	O	O	O	O	O
New Jersey	X	O	X	O	O	O	O
New Mexico	X	X	X	X	O	X	X

(Continued)

From Howley, A., Howley, C., & Pendarvis, E. (1986). Teaching gifted children, pp. 121-123. Boston: Little, Brown. Used by permission.

BOX 4.4 (*Continued*)

State	Sp Ed	W/ Han	Local	$1M	$5M	$/Child	Certif
New York	O	O	O	X	O	O	O
North Carolina	X	X	X	X	X	O	O
North Dakota	X	O	O	O	O	O	X
Ohio	X	O	O	X	O	O	O
Oklahoma	O	O	X	X	O	O	O
Oregon	X	O	O	O	O	O	O
Pennsylvania	X	X	X	X	X	O	O
Rhode Island	O	O	O	O	O	O	O
South Carolina	O	O	O	X	O	O	O
South Dakota	X	X	X	O	O	O	O
Tennessee	O	X	X	X	O	O	X
Texas	O	O	O	X	O	O	O
Utah	O	O	O	O	O	O	O
Vermont	O	O	O	O	O	O	O
Virginia	O	O	X	X	O	O	O
Washington	X	O	O	X	O	O	O
West Virginia	X	X	X	X	O	X	X
Wisconsin	O	O	O	O	O	O	O
Wyoming	O	O	O	O	O	O	O

Sp Ed = gifted programs administered as part of special education
W Han = gifted programs closely tied to mandates for handicapped
Local = gifted programs locally mandated by state
$1M = state appropriations in excess of $1,000,000 in fiscal year 1981 or 1982
$5M = state appropriations in excess of $5,000,000 in fiscal year 1981 or 1982
$/Child = state appropriations amount to $500 or more per reported child.
Certif = teacher certification mandated for gifted education as of June, 1981
n/a = not applicable
X = yes; O = no

Caution

Information in the funding categories is not necessarily comparable across states, because patterns of local and state funding vary. For example, in the South, state governments bear a heavier burden of school support than they do in the industrial Northeast. The analysis that follows attempts, however, to group data for comparison across *program type*. The figures should be taken as approximations only.

Summary Statistics (See Caution Above)

Seventeen states mandated programs.

Of these seventeen, fourteen (82 percent) also administer gifted programs as part of special education.

Of these seventeen, thirteen (76 percent) tie gifted programs closely to the mandates for the handicapped, (i.e., accord gifted students the same due process rights mandated for the handicapped under PL 94-142).

TABLE A

Of these seventeen, nine (53 percent) appropriated more than $1,000,000 in 1981 or 1982.

Of these seventeen, four (24 percent) appropriated more than $500/child in 1981 or 1982.

Of these seventeen, three (18 percent) appropriated *nothing* in 1981 or 1982. (Three other states did not report funding information.)

Thirty-three states did not mandate local programs.

Of these thirty-three, eleven (33 percent) also administer gifted programs as part of special education.

Of these thirty-three, *none* tie gifted programs closely to the mandates for the handicapped, (i.e., accord gifted students the same due process rights mandated for the handicapped under PL 94-142).

Of these thirty-three, eleven (33 percent) appropriated more than $1,000,000 in 1981 or 1982.

Of these thirty-three, one (3 percent) appropriated more than $500/child in 1981 or 1982.

Of these thirty-three, twenty-one (64 percent) appropriated *nothing* in 1981 or 1982.

Of the fifty states, six reported providing service to more than 50,000 students. [Students in these six states accounted for 39 percent of all gifted students served (N = 357,030). These six states appropriated a total of $71,771,010 for gifted education.]

Of these six states, two (North Carolina and Pennsylvania) mandated gifted programs *and* administered gifted programs as special education *and* extended the protections of PL 94-142 to gifted students. Per child appropriations in these states (FY 1982) were $288 and $500, respectively. *These states appropriated fully 34 percent of all monies spent on gifted students in 1982, yet their programs served only 12.7 percent of all identified gifted students in the United States.*

Of these six states, four (California, Illinois, Minnesota, and New York) *neither* mandated gifted programs *nor* administered gifted programs as special education *nor* extended the protections of PL 94-142 to gifted students. Per child appropriations in these states (FY 1982) were $103, $93, $11, and $28, respectively. *These states appropriated 19 percent of all monies spent on gifted students in 1982. Their programs, however, served 42 percent of all identified gifted students in the United States.*

Summary Conclusions (See Caution Above)

1. Mandated gifted programs are most often administered by special education. They most often extend the due process rights of PL 94-142 to gifted students.
2. Mandated gifted programs that are administered under special education and that extend due process rights to gifted students are apparently the best funded in the nation.

Adapted from P. Mitchell (Ed.), *A Policymaker's Guide to Issues in Gifted and Talented Education*, Alexandria, VA, 1981, pp. 3-7. Reprinted by permission of National Association of State Boards of Education, Alexandria, VA.

TABLE B
Data from O'Connell (1986) for 14 States Surrounding Tennessee

State	Kind of Definition	Specific & Unique Provisions to Ensure Equal Access	Percent of Programs for Intellectually Gifted	Existence of IQ Cut-off Point	Local Programs Mandated With Funding	Gifted Programs Housed With Special Education	PL 94-14 Rules Applied Gifted Program
AL	cog	Ch. I regs	98%	Y	Y	Y	Y
AR	multi	due process	95%	N	Y	Y	N
GA	cog	none	100%	Y	Y	Y	N
IL	multi	quotas	80%	N	N	N	N
IN	none	none	none	N	N	N	N
KY	multi	none	99%	N	Y	N	N
MO	multi	due process	98%	Y	N	Y	N
MS	multi	LEA	97%	Y	N	N	N
NC	cog	none	100%	N	Y	Y	Y
OH	multi	none	90%	Y	N	Y	N
PA	multi	none	N/A	Y	Y	Y	Y
SC	multi	none	N/A	N	Y	N	N
TN	cog	none	100%	Y	Y	N	N
VA	multi	LEA	85%	N	Y	Y	N
WV	cog	V or P of Wechsler	96%	Y	Y	Y	Y

Legend

- Kind of Definition: "cog." stands for cognitive, for giftedness defined as intellectual or academic talent; "multi" stands for intellectual giftedness plus any or all of the following: creativity, arts talent, leadership, psychomotor and miscellaneous.
- Specific and Unique Provision to Ensure Equal Access: response indicates special SEA provisions to address equal access to gifted programs by low-income or minority students.
- Percent of Programs for Intellectually Gifted: figure indicates the percentage of programs that serve intellectually gifted students in each state.
- Existence of IQ Cut-off Point: response indicates whether or not the SEA has adopted a cut-point.
- Local Programs Mandated With Funding: local programs mandated by the state department of education.
- Gifted Programs Housed with Special Education: gifted programs administratively housed with special education programs.
- PL 94-142 Rules Applied to Gifted Programs: due process procedures and other requirements of PL 94-142 are applied to gifted students and programs.

PL 94-142 Funding Provisions Applied to Gifted Programs	Percent of LEAs Providing Service	Minimum Minutes Per Week	Dollars Per Student	Existence of Pull-out Enrich-ment	Early Entry to School	Carnegie Units in Elemen-tary School	Special Certifica-tion for Teachers of Gifted
N	82%	300	N/A	Y(N/A)	N	N	Y(N/A)
N	100%	150	1117*	Y(85%)	N	Y	Y(18)
N	100%	300	531*	Y(N/A)	N	N	Y(15)
N	81%	150	172*	Y(N/A)	Y	Y	N
N	0%	0	0	N	N	N	N
N	99%	360	400	Y(N/A)	N	N	Y(12)
N	52%	180	666	Y(89%)	Y	N	N
Y	79%	300	669*	Y(N/A)	N	N	Y(5)
Y	99%	200	272*	Y(N/A)	N	Y	Y(12)
Y	65%	300	456*	Y(N/A)	Y	N	N
Y	92%	N/A	N/A	Y(60%)	Y	Y	N
N	100%	0	401	N/A	N	Y	N
N	100%	N/A	800	Y(N/A)	Y	N	N
N	100%	N/A	299	Y(N/A)	Y	Y	N
Y	100%	N/A	1000*	Y(N/A)	Y	Y	Y(18)

- PL 94-142 Funding Provisions Applied to Gifted Programs: at the state level, funds for both handicapped and gifted programs are mixed.
- Percent of LEAs Providing Service: response indicates percent of local districts providing any service (not to be confused with percent of students actually receiving services).
- Minimum Minutes Per Week: SEA mandated minimum number of minutes per week students must be provided service in gifted programs (often tied to funding).
- Dollars Per Student: includes both local and state funding; figures without asterisks supplied by state; figures with asterisks computed from data supplied by states. *Please note that these figures are not necessarily comparable due to funding differences among states.*
- Existence of Pull-out Enrichment Programs: figures in parentheses are percent of programs that are pull-out programs; all states reported having pull-out programs.
- Early Entry to School: response indicates whether or not state allows early entry to school (Kindergarten or first grade).
- Carnegie Units in Elementary School: response indicates whether or not SEA allows students to accumulate Carnegie Units earlier than the ninth grade.
- Special Certification for Teachers of Gifted: response indicates whether or not SEA requires specialized certification; figure in parentheses indicates number of semester hours required.

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Appendix A

Telephone Interviews
(Tennessee, Virginia, West Virginia)

Tennessee. Tennessee's 1972 special education law established the mandate to serve gifted students. Two documents address the conduct of gifted programs by local districts. A manual of rules and regulations for special education provides an operational definition of giftedness and criteria to determine eligibility. An evaluation manual, currently being revised, specifies the procedures to be followed when gifted students are evaluated.

Tennessee revised its definition of giftedne[illegible] in the new special education regulations that were adopted in summer 1986. Under the new definition, a student must satisfy two out of three criteria to be declared eligible to receive services. The three criteria are achievement at the 96th percentile, intelligence (IQ) at the 96th percentile, and superior intellectual ability demonstrated by products.

Several task forces are currently at work on issues pertinent to gifted education. One task force is developing a manual that is intended to help regular classroom teachers provide for gifted students in their classrooms. Another task force is developing guidelines for implementing the third definitional criterion, above (superior intellectual ability demonstrated by products). Another task force is involved in planning for a series of state-funded grants to local districts for program development and innovation.

One state-level study is under consideration at present. In the past, several studies of the governor's school have been conducted. The state department of education is now discussing with researchers at the University of Tennessee at Knoxville the feasibility of conducting a study of the effect on individual students of attendance at the governor's school.

Virginia. Virginia Department of Education staff reports that Virginia changed the administrative location of gifted education in 1986. Gifted education is now housed administratively with regular education, rather than with special education. Staff department officials feel that this move was a change for the better because it allowed for the emergence of more flexible program development.

At present, a task force is investigating model program options and studying administrative arrangements to facilitate programming at the elementary, middle school, and secondary levels. A report from the task force is due in the summer of 1988.

State department officials would like to alter the current definition of giftedness. At present, Virginia follows the 1978 federal definition, which includes five different kinds of talent. Some favor a more academic definition.

A revised definition will likely include programming for vocational students. A study conducted in Fredericksburg City Schools investigated the relationship of academic and vocational talent. The study found that about half a sample of academically talented youngsters could not be identified as mechanically talented, whereas half a sample of mechanically talented students could also be identified as academically talented. None of the students in the sample of mechanically able students had previously been identified as academically talented. This finding has implications for the issue of equal access to gifted programs.

West Virginia. The West Virginia Board of Education has formally adopted a new initiative to strengthen gifted education.

State department officials say that two issues are likely to be addressed prominently under the new initiative: the adoption of a new definition of giftedness and the adoption of a new policy regarding the administration of local programs. The current definition is based on identification of exceptional intellectual talent using intelligence tests. A recent task force on the education of intellectually gifted students recommended that a new definition include academic and arts talent and that each local district appoint a county-level coordinator of gifted programs.

State department staff reports that two task forces are at work on issues pertinent to gifted education. First, Mary Frasier of the University of Georgia is chairing a task force that will develop learning outcomes for process skill areas. Dr. Frasier's task force will relate such outcomes to academic content. A second task force composed of teachers is charged with the development of a competency test for teachers of gifted students. This instrument is being developed together with similar tests for other teaching specializations as part of the state department's attempt to ensure the quality of certified teachers.

The existence of the West Virginia Master Plan for Education helps to promote quality programs for gifted students. The plan indicates that the state is committed to serving intellectually talented, academically talented, and artistically talented students, and it establishes the expansion of services to academically talented and artistically talented students as a goal to be addressed in the near future. The plan also includes the establishment of a residential academy for talented students as a goal.

The strength of West Virginia's gifted programs rests in the due process provisions that entitle gifted students to services intended to meet their individual needs. Several provisions of the West Virginia special education regulations promote this goal.